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PATENT  
Docket No.: 082368-004000US  
Client Ref. No.: E1-A0203P-US

TOWNSEND and TOWNSEND and CREW LLP

By: /Megan McCoy/  
Megan McCoy

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

Yasuko NAKAGAWA et al.

Patent No.: 7,662,270

Issued: November 24, 2009

Application No.: 10/532,264

For: GENE EXPRESSED SPECIFICALLY IN  
DOPAMINE-PRODUCING NEURON  
PRECURSOR CELLS AFTER  
TERMINATION OF DIVISION

Customer No.: 20350

Confirmation No.: 4474

Examiner: KOLKER, Daniel E.

Art Unit: 1649

REQUEST FOR CERTIFICATE  
OF CORRECTION UNDER §1.322

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

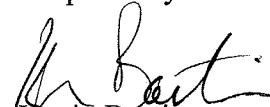
Commissioner:

Pursuant to 37 CFR §1.322 Applicant submits a Certificate of Correction correcting errors within the claims attributable solely to the Office. The desired corrections are set described on enclosed form PTO/SB/44 and are supported by the July 13, 2009 Notice of Allowability with Examiner's Amendment (*see* Examiner's Amendment under "4. In the claims:" and the April 23, 3009 Amendment showing the contents of the claims referenced in the Examiner's Amendment.

Patentees respectfully request correction of the instant issued patent as described on the attached Certificate of Correction and insertion of the Certificate at the end of the patent.

It is believed that no fee is required for this Request For Certificate of Correction as the error is the result of an inadvertent mistake made by the United States Patent and Trademark Office. However, if a fee is required, the Commissioner is authorized to charge said fee to the undersigned's Deposit Account No. 20-1430

Respectfully submitted,



Kevin Bastian  
Reg No. 34,774

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**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**

Page 1 of 1

PATENT NO. : 7,622,270  
APPLICATION NO.: 10/532,264  
ISSUE DATE : November 24, 2009  
INVENTOR(S) : Nakagawa et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 1, line 65, please delete "Steroli's" and insert --Sertoli's--.

At column 63, Claim 1, (iv), lines 25-27, please delete "or a fragment of said polypeptide comprising at least eight amino acid residues; and".

At column 64, claim 6, (iv), lines 24-26, please delete "or a fragment of said polypeptide comprising at least eight amino acid residues; and".

At column 63, claim 10, (i), line 43, please delete "ED" and insert --ID--.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

TOWNSEND AND TOWNSEND AND CREW LLP  
Two Embarcadero Center, Eighth Floor  
San Francisco, CA 94111-3834



Continuation of Substance of Interview including description of the general nature of what was discussed: On 6/30/09 examiner called Mr. Bastian and discussed possible amendments. Examiner faxed proposed amendments, including 3 options for amending independent claims 29 and 32. On 7/6/09 Mr. Bastian left a voicemail with Examiner Kolker indicating that the proposed amendments were accepted, and indicating that option 3 of the three options presented was acceptable. Copies of the changes agreed upon are included in this office action.

**Notice of Allowability**

Application No.

10/532,264

Examiner

DANIEL KOLKER

Applicant(s)

NAKAGAWA ET AL.

Art Unit

1649

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/23/09.
2. ☒ The allowed claim(s) is/are 29-32,34-35,41-44.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application
- ☒ Interview Summary (PTO-413), Paper No./Mail Date 20090630A
- ☒ Examiner's Amendment/Comment
- ☐ Examiner's Statement of Reasons for Allowance
- ☐ Other \_\_\_\_\_

/Daniel E. Kolker/  
Primary Examiner, Art Unit 1649  
July 9, 2009

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**EXAMINER'S AMENDMENT**

1. The remarks and amendments filed 23 April 2009 have been entered. Claims 29 - 32, 34-35, and 41-44 are pending.

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kevin Bastian on 6 July 2009. Examiner Kolker had faxed proposed amendments to Mr. Bastian on 30 June 2009; on 6 July 2009 Mr. Bastian left a voicemail message indicating that the amendments were approved.

The application has been amended as follows:

3. In the specification:

At p. 1, line 1, the title has been changed to:

-- Methods of isolating dopaminergic neuron precursor cells --

4. In the claims:

In claim 29, line 3, delete "a cell sample thought to comprise a dopaminergic neuron precursor cell" and replace with -- a cell sample comprising ventral midbrain cells --

In claim 29, lines 4-5, change "antibody that binds to:

(a) a polypeptide" to

-- antibody that binds to a polypeptide --

In claim 29, delete part (iii) and replace with -- (iii) a nucleotide encoding residues 18 - 700 of SEQ ID NO:3 or residues 18 - 650 of SEQ ID NO:4 --

In claim 29, part (iv), change "3 or 4; or" to -- 3 or 4; and -- .

→ In claim 29, delete part (b).

In claim 32, line 3, delete "a cell sample thought to comprise a dopaminergic neuron precursor cell" and replace with -- a cell sample comprising ventral midbrain cells --

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In claim 32, lines 4-5, change "antibody that binds to:

(a) a polypeptide" to

-- antibody that binds to a polypeptide ---

In claim 32, delete part (iii) and replace with -- (iii) a nucleotide encoding residues 18 - 700 of SEQ ID NO:3 or residues 18 - 650 of SEQ ID NO:4 ---

In claim 32, part (iv), change "80% more" to -- 80% or more ---

In claim 32, part (iv), change "3 or 4; or" to -- 3 or 4; and ---.

→ In claim 32, delete part (b).

In claim 41, line 2, delete the words "of (a)".

In claim 42, line 2, delete the words "of (a)".

In claim 43, line 2, delete the words "of (a)".

In claim 43, delete part (iii) and replace with -- (iii) a nucleotide encoding residues 18 - 700 of SEQ ID NO:3 or residues 18 - 650 of SEQ ID NO:4 ---

In claim 44, line 2, delete the words "of (a)".

In claim 44, delete part (iii) and replace with -- (iii) a nucleotide encoding residues 18 - 700 of SEQ ID NO:3 or residues 18 - 650 of SEQ ID NO:4 ---

The above amendments correct claim dependency (deletion of notation (a) and (b) within the independent claims) and grammatical errors (changing "80% more" to "80% or more"). Support for the amendments to claims 29 and 32, line 3 of each, can be found at p. 4 lines 5 - 8 of the specification.

The amendments to claims 29, 32, 43-44, part (iii) of each claim is to clarify which specific residues of SEQ ID NO:3 and 4 are referred to by the "signal sequence portion" language. Support for these changes can be found in the specification, at p. 6 lines 30-34 (the first 17 residues of SEQ ID NO:3 and 4 are the signal sequences, therefore residue 18 is the first residue after the signal sequence) and the sequence listing as originally filed (SEQ ID NO:3 is 700 amino acids, SEQ ID NO:4 is 650 amino acids).



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5. The following is an examiner's statement of reasons for allowance: neither Carulli WO 01/98630 nor Sun 2003 teaches or suggests that the relevant protein is expressed in ventral midbrain cells. In fact, Sun 2003 characterized the Kirrel2 protein as being specific to  $\beta$  cells of the pancreas (see whole paper) and did not detect mRNA encoding the protein in brain (Figure 1). Thus selecting a particular brain area, namely the ventral midbrain as recited in claims 29 and 32 as amended, would not have been obvious to one of ordinary skill in the art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL KOLKER whose telephone number is (571)272-3181. The examiner can normally be reached on Mon - Fri 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Stucker can be reached on (571) 272-0911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel E. Kolker/

Primary Examiner, Art Unit 1649

July 8, 2009

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

- |                                      |   |
|--------------------------------------|---|
| <u>Claim # of</u><br><u>US Pat.:</u> | 1.-28. (Cancelled)  |
|                                      | 29. (Currently Amended) A method of selecting a dopaminergic neuron precursor cell, wherein the method comprises:   |
| Claim 1                              | contacting a cell sample thought to comprise a dopaminergic neuron precursor cell with an antibody that binds to:   |
|                                      | (a) a polypeptide encoded by a polynucleotide comprising a sequence selected from   |
|                                      | (i) a nucleotide sequence comprising nucleotides 178 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2;  |
|                                      | (ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3 or 4;   |
|                                      | (iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4; <u>and</u>   |
|                                      | (iv) a nucleotide sequence encoding an amino acid sequence which has 80% or more identity with the amino acid sequence of SEQ ID NO: 3 or 4; <u>and, or</u>   |
|                                      | <del>(v) a nucleotide sequence that hybridizes under stringent conditions with the complement of the nucleotide sequence of (i), wherein the stringent conditions include post hybridization washing of three times in 2x SSC/0.1% SDS at room temperature for 20 minutes each, and three times in 1x SSC/0.1% SDS at 37°C for 20 minutes each, and finally twice in 1x SSC/0.1% at 50°C for 20 minutes each, and the nucleotide sequence</del> |

~~encodes a protein having a single transmembrane domain and five Ig domains; or~~

(b) a fragment of said polypeptide comprising at least eight amino acid residues; and

~~selecting~~ isolating the dopaminergic neuron precursor cell, wherein the dopaminergic neuron precursor cell has bound to the antibody.

Claim # of  
US Pat.:

30. (Previously Presented) The method according to claim 29, wherein the method comprises the step of separating the dopaminergic neuron precursor cell by flow cytometry.

Claim 2

Claim 3

31. (Previously Presented) The method according to claim 29, wherein the antibody binds to an extracellular region of the polypeptide.

Claim 6

32. (Currently Amended) A method of producing a cell population comprising dopaminergic neuron precursor ~~cell~~ cells, wherein the method comprises contacting a cell sample thought to comprise ~~[[a]]~~ the dopaminergic neuron precursor ~~cell~~ cells with an antibody that binds to:

(a) a polypeptide encoded by a polynucleotide comprising a sequence selected from

(i) a nucleotide sequence comprising nucleotides 178 to 2280 of SEQ ID NO: 1  
or nucleotides 127 to 2079 of SEQ ID NO: 2;

(ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3 or 4;

(iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4; and

(iv) a nucleotide sequence encoding an amino acid sequence which has 80% more identity with the amino acid sequence of SEQ ID NO: 3 or 4; and, or

~~(v) a nucleotide sequence that hybridizes under stringent conditions with the complement of the nucleotide sequence of (i), wherein the stringent~~

~~conditions include post hybridization washing of three times in 2x  
SSC/0.1% SDS at room temperature for 20 minutes each, and three times  
in 1x SSC/0.1% SDS at 37°C for 20 minutes each, and finally twice in 1x  
SSC/0.1% at 50°C for 20 minutes each, and the nucleotide sequence  
encodes a protein having a single transmembrane domain and five Ig  
domains; or~~

(b) a fragment of said polypeptide comprising at least eight amino acid residues; and

~~obtaining~~ isolating the cell population comprising dopaminergic neuron precursor

cells, wherein the dopaminergic neuron precursor cells have bound to the antibody.

Claim # of

US Pat.:

33. (Cancelled)

34. (Previously Presented) The method according to claim 32, wherein the

Claim 7

method comprises the step of separating the dopaminergic neuron precursor cell by flow  
cytometry.

Claim 8

35. (Previously Presented) The method according to claim 32, wherein the  
antibody binds to an extracellular region of the polypeptide.

36.-40. (Cancelled)

41. (Previously Presented) The method according to claim 29, wherein the  
nucleotide sequence of (iv) of (a) encodes a protein having the amino acid sequence having 95%  
or more identity with the amino acid sequence of SEQ ID NO: 3 or 4.

Claim 4

42. (Previously Presented) The method according to claim 32, wherein the  
nucleotide sequence of (iv) of (a) encodes a protein having the amino acid sequence having 95%  
or more identity with the amino acid sequence of SEQ ID NO: 3 or 4.

Claim 9

Claim # Reply to Office Action of December 2, 2008

of US Pat.:

Claim 5 43. (Currently Amended) The method according to claim 29, wherein the polypeptide of (a) is encoded by a polynucleotide comprising a sequence selected from the group consisting of:

- (i) a nucleotide sequence comprising nucleotides 178 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2;
- (ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: [[4]] 3 or 4; and
- (iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4.

Claim 10

44. (Currently Amended) The method according to claim 32, wherein the polypeptide of (a) is encoded by a polynucleotide comprising a sequence selected from the group consisting of:

- (i) a nucleotide sequence comprising nucleotides 178 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2;
- (ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: [[4]] 3 or 4; and
- (iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4.